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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,558	02/24/2004	George R. Hulse	0232W/00027-U	8141
24350	7590	08/08/2005	EXAMINER	
STITES & HARBISON, PLLC 400 W MARKET ST SUITE 1800 LOUISVILLE, KY 40202-3352			CHOI, JACOB Y	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/785,558

Applicant(s)

HULSE, GEORGE R.

Examiner

Jacob Y. Choi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-20 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/2004 & 5/2004.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 12/13/2004 & 5/25/2004 is being considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

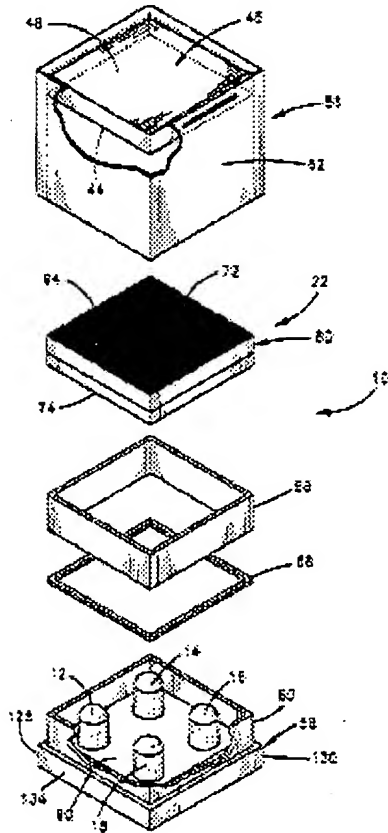
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-10, 12, 13, 15, 16, 18, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Helstern et al. (USPN 5,820,246).

Regarding claims 1, 2, 16, 19, Helstern et al. discloses a waveguide (74) having a predetermined length with a light-receiving surface (Figures 4 & 5) and a light-emitting surface (Figures 4 & 5), an elongated light source (12, 14, 16, 18) positioned adjacent to the light-receiving surface of the waveguide and extending **substantially** along the length of the waveguide (74), and a scattering cap (80) secured to the light-emitting

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surface of the waveguide and extending **substantially** along the length of the waveguide (74), a protective sleeve (56) that encases the entire illumination device, except for the lateral surface of the scattering cap, a housing (130) positioned adjacent to the waveguide and enclosing the light-receiving surface of the waveguide, and the scattering cap (80) receiving light transmitted through the waveguide from the light source and scattering the light to create a **substantially** uniform light intensity pattern along a lateral surface of the scattering cap (column 3, lines 35-50).



Note: claims in a pending application should be given their broadest reasonable interpretation. In re Pearson, 181 USPQ 641 (CCPA 1974).

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Regarding claim 3, Helstern et al. discloses the elongated light source (12, 14, 16, 18) is also enclosed within the housing.

Regarding claim 4, Helstern et al. discloses the elongated light source (34, 36) is a multiplicity of spaced point light source arranged in a line extending along the light-receiving surface of the waveguide.

Regarding claims 5, 18, & 20, Helstern et al. discloses the point light sources are light-emitting diodes (LEDs)

Regarding claim 6, Helstern et al. discloses the lateral surface of the scattering cap is curved to simulate a neon or fluorescent tube.

Note: in order to given patentable weight, a functional recitation must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. *In re Fuller*, 1929 C.D. 172; 388 O.G. 279.

Regarding claims 7 & 8, Helstern et al. discloses light is transmitted through the waveguide to the scattering cap through total internal reflection.

Regarding claims 9, Helstern et al. discloses the housing includes a pair of sidewalls engaging side surfaces of the waveguide and defining an open-ended channel that extends **substantially** the predetermined length of the waveguide.

Regarding claims 10, Helstern et al. discloses the housing further includes a floor portion connecting the sidewalls so that the housing has a substantially U-shape.

Regarding claims 12, Helstern et al. discloses a protective shield applied to and encapsulating the waveguide and the scattering cap.

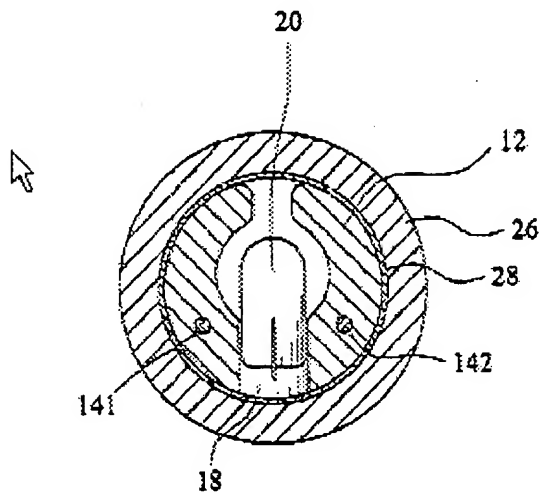
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Regarding claims 13, Helstern et al. discloses a protective sleeve that encases the entire illumination device, except for the lateral surface of the scattering cap.

Regarding claims 15, Helstern et al. discloses the scattering cap has a channel defined therethrough, the channel being filled with an adhesive material, thus allowing the scattering cap to be secured to the waveguide (column 5, lines 25-35).

4. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen (US 2004/0012956).

Regarding claim 1, Chen discloses a waveguide (12) having a predetermined length with a light-receiving surface (10) and a light-emitting surface (16), an elongated light source (20) positioned adjacent to the light-receiving surface of the waveguide and extending **substantially** along the length of the waveguide, and a scattering cap (26) secured to the light-emitting surface of the waveguide and extending **substantially** along the length of the waveguide (12), the scattering cap (26) receiving light transmitted through the waveguide from the light source and scattering the light to create a **substantially** uniform light intensity pattern along a lateral surface of the scattering cap [0027].



Note: claims in a pending application should be given their broadest reasonable interpretation. In re Pearson, 181 USPQ 641 (CCPA 1974).

Regarding claim 2, Chen discloses a housing (28) positioned adjacent to the waveguide and enclosing the light-receiving surface of the waveguide.

Regarding claim 3, Chen discloses the elongated light source (20) is also enclosed within the housing.

Regarding claim 4, Chen discloses the elongated light source (20) is a multiplicity of spaced point light source arranged in a line extending along the light-receiving surface of the waveguide.

Regarding claim 5, Chen discloses the point light sources are light-emitting diodes (LEDs).

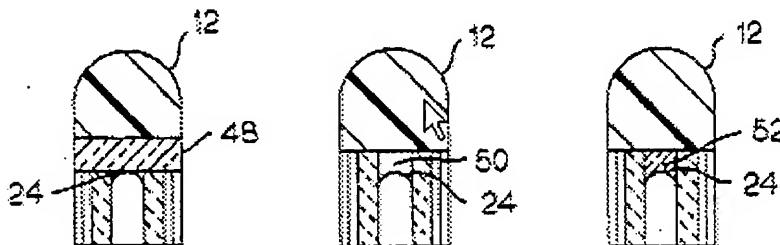
Regarding claim 6, Chen discloses the lateral surface of the scattering cap is curved to simulate a neon or fluorescent tube (circularly shaped cap).

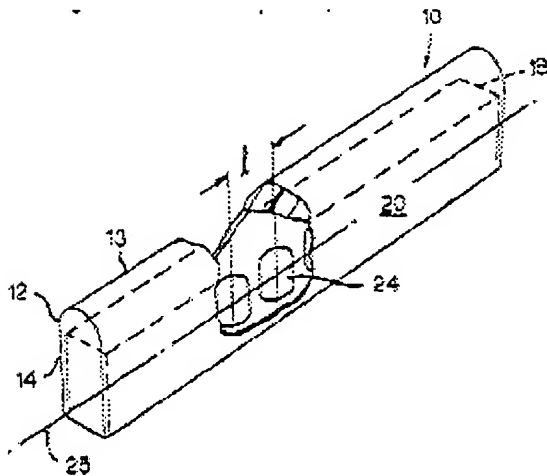
Regarding claims 7 & 8, Chen discloses light is transmitted through the waveguide to the scattering cap through total internal reflection.

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5. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Cleaver et al. (USPN 6,592,238).

Regarding claims 1, 16, & 19, Cleaver et al. discloses a waveguide (48; column 8, lines 30-45 "a light scattering spacer member ... such spacer 48 could be fabricated from the same material as the waveguide 12, e.g., a high impact resistant acrylic material") having a predetermined length with a light-receiving surface (15) and a light-emitting surface (13), an elongated light source (LEDs) positioned adjacent to the light-receiving surface of the waveguide (48) and extending **substantially** along the length of the waveguide (48), and a scattering cap (12) secured to the light-emitting surface of the waveguide (48) and extending **substantially** along the length of the waveguide (48), the scattering cap (12) receiving light transmitted through the waveguide from the light source and scattering the light to create a **substantially** uniform (Figure 7E & 7F) light intensity pattern along a lateral surface of the scattering cap (12).





Regarding claim 2, Cleaver et al. discloses a housing (32 or Figure 3A & 3B) positioned adjacent to the waveguide and enclosing the light-receiving surface of the waveguide.

Regarding claim 3, Cleaver et al. discloses the elongated light source (LEDs) is also enclosed within the housing.

Regarding claim 4, Cleaver et al. discloses the elongated light source (LEDs) is a multiplicity of spaced point light source arranged in a line extending along the light receiving surface of the waveguide (Figures 7E & 7F).

Regarding claim 5, Cleaver et al. discloses the point light sources are light-emitting diodes (LEDs).

Regarding claim 6, Cleaver et al. discloses the lateral surface of the scattering cap is curved to simulate a neon or fluorescent tube (column 1, lines 9-14).

Regarding claims 7 & 8, Cleaver et al. discloses light is transmitted through the waveguide to the scattering cap through total internal reflection (inner reflector(s) being used inside the protective sleeve).

Regarding claim 9, Cleaver et al. discloses the housing includes a pair of side walls (Figures 3, 3A, & 3B) engaging side surfaces of the waveguide and defining an open-ended channel that extends **substantially** the predetermined length of the waveguide.

Regarding claim 10, Cleaver et al. discloses the housing further includes a floor portion connecting the sidewalls so that the housing has a **substantially** U-shape (Figures 3, 3A, & 3B).

Regarding claim 11, Cleaver et al. discloses space between the elongated light source and the housing is filled with a potting compound (28).

Regarding claim 12, Cleaver et al. discloses a protective shield (20) applied to and encapsulating the waveguide and the scattering cap.

Regarding claim 13, Cleaver et al. discloses a protective sleeve that encases the entire illumination device (Figure 3), except for the lateral surface of the scattering cap.

Regarding claim 14 & 17, Cleaver et al. discloses the scattering cap is a thin coating (12a) applied to the light-emitting surface of the waveguide.

Regarding claim 15, Cleaver et al. discloses the scattering cap has a channel defined therethrough, the channel being filled with an adhesive material, thus allowing the scattering cap to be secured to the waveguide.

Regarding claims 18 & 20, Cleaver et al. discloses the elongated light source is a multiplicity of light-emitting diodes (column 9, lines 17-53).

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Helstern et al. (USPN 5,820,246) in view of Parker et al. (US 2003/0123245).

Regarding claim 11, Helstern et al. (246') discloses the claimed invention, except for the potting compound being utilized around the light source(s).

Parker et al. teaches the light source(s) may be held in any suitable manner such as potting or bonding material in order to eliminate any air gaps or air interface surface between the light sources and surround light transition areas.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a potting material to benefit light loss and increase the light output emitted by the light-emitting panel.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Helstern et al. (USPN 5,820,246) in view of Helstern (USPN 5,913,617).

Regarding claim 14, Helstern et al. (246') discloses the claimed invention, except for the thin coating being the scattering cap.

Helstern et al. (617') teaches that anti-reflecting coating is provided on a upper surface of the panel to minimize ambient specular reflection.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a coating on a exterior/cap to provide a different visual effects to increase the ecstatic appearance of the device.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Helstern (USPN 5,913,617) – display system (coating)

Grenda et al. (US 2003/0095399) – light emitting diode light bar

Mizohata et al. (USPN 4,141,058) – light diffusing device

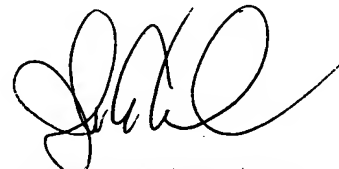
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y. Choi whose telephone number is (571) 272-2367. The examiner can normally be reached on Monday-Friday (10:00-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JC



JOHN ANTHONY WARD
PRIMARY EXAMINER